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been thought wise to hold a convention for studying how best to manage the sanitary interests of cities and towns so affected. Every person interested directly or indirectly in this important subject is earnestly requested to be present and assist in discussing the papers, and add whatever information he can to the solution of these practical and most important questions, affecting as they do the health and lives of thousands of citizens of these three great commonwealths annually.

CHOLERA AND EUROPE.—The epidemic of cholera which has for so many months been raging in the valleys of the Tigris and Euphrates and the interior of Mesopotamia has also made considerable inroads into Persia. Reports of the epidemic having crossed the western boundary of Persia have been heard from time to time; but it has now been announced to the Faculty of Medicine of Paris, that there has been an alarming increase of the disease in central Persia and on the Turko-Persian frontier, and that the inhabitants are fleeing toward the north. All those who can afford the journey are trying to reach the Russian ports on the Caspian. Remembering that this is the route into Europe which the cholera has so frequently taken, the announcement, says *The Medical and Surgical Reporter*, must be regarded as one of great gravity.

MENTAL SCIENCE.

THE RAPIDITY OF MENTAL PROCESSES IN INSANITY.—The fact that the change in the mode of responding to the stimuli of the environment, characteristic of a disturbed mental equilibrium, will reveal itself in things important and trivial, has often been emphasized and illustrated. In this respect a comparison of the time required for performing simple mental operations in the insane with similar times in normal individuals is interesting, especially if we take account of the nature of the disease. The chief point in such an investigation is to secure a fair comparison,—a desideratum which former studies have not sufficiently taken into account. The most recent contribution to this field comes from a lady (Marie Walitzky, *Revue Philosophique*, December, 1889), and furnishes interesting results, based upon a sound method. She has chosen for her subjects men of good education—physicians, military officers, bankers, etc.—suffering from mental disease, and compared the times they require for executing certain mental processes with the times required for the performance of the very same processes, tested by the same apparatus, under the same conditions, by healthy physicians and other intelligent persons. The subjects were three persons suffering from paralytic dementia,—a case of remission after intense maniacal excitement; a case of general paralysis (in the initial stage of excitability); and another case observed at two different stages (in the period of remission, and in a state of maniacal agitation). Experiments were also made upon another patient whose disease is not altogether clear, and who was in a condition very nearly normal. The preliminary stages of practice were overcome; though times differing largely from the average always occurred, and had to be rejected. The processes studied were (1) the simple re-action time (with each hand) to a sound; (2) a choice of re-action, re-acting with the one hand to a loud sound, and with the other to a low one; (3) the re-action to a spoken word; (4) the ordinary association of one word with another; (5) the addition of one number to another. The associations were further distinguished as external, e.g., *flour-hour*, *mouth-nose*, in which the link was not logical, but rather accidental; internal or logical associations, such as *table-round*, *house-dwelling*; and associations fixed by habit, such as *pater-noster*, *Adam-Eve*. Of course, these distinctions are neither absolute nor always easy to apply, and the same association may take place differently in different persons. Each average for each subject is founded upon about a hundred and fifty observations. The most important conclusions are the following: in the three cases of paralytic dementia the simple re-action time is lengthened, .225, .388, and .364 of a second; while in the average of five healthy individuals this average was .188 of a second; while in the other cases, mainly condi-

tions of remission, no essential difference exists, the average time being .201 of a second. The difference in the time of re-action to a weak and to a strong stimulus is about the same in sane and insane, except in the two most pronounced cases of paralytic dementia, where the additional time needed to re-act to a slight stimulus is one-tenth of a second or more. The choice time is (and a similar relation holds of the other times) often three or four times as long in the paralytic dementia as in sanity, but approaches, though it is far from reaching, the normal in the states of remission: dementia, .816 of a second; remission, .629 of a second; normal, .364 of a second. The re-action to words is markedly longer than the normal only in the severest case of dementia, .864 of a second; normal, .285 of a second. The association time is most lengthened in a state of remission approaching melancholy, 1.377 seconds; in the state of remission, as in paralytic dementia, it approaches the normal, .898 of a second (normal, .680 of a second). In mania this time is shortened, .263 of a second. In those cases in which the patient was observed in two different stages of the disease, the same result is confirmed: the association time diminishes, and the choice time increases, as the maniacal agitation becomes more pronounced. The observations respecting the nature of the association are too limited to be separately discussed. These results suggest to the authoress the view, that, granting a reduction in association time to be dependent upon the faculty of unconsciously reproducing the associations fixed in the memory, the automatic function of the mind is increased in the initial stages of mental impairment, and that, parallel with this increase of mental automatism, the activity of the will decreases, its processes being slower. As the intellectual powers fade, the automatic functions also become slow, and finally even the perception of the simplest impressions is slackened. In the period of remission, even at its best, the mental powers do not fully recover: the automatism of the brain becomes normal, but the recovery of the will is incomplete.

A CURIOUS MENTAL TRAIT.—A correspondent of the German Anthropological Society tells of his meeting a farmer by the name of Löwendorf, who had a peculiar habit of writing "Austug" for "August," his Christian name. Some years later he was inspecting a school, and heard a little girl read "leneb" for "leben," "naled" for "nadel," and the like. Upon inquiring, he found that her name was Löwendorf, and that she was a daughter of his former friend the farmer, now dead. This defect was noticeable in the speech and writing of both father and daughter. It appeared in the father as the result of a fall that occurred some time before the birth of his daughter.

NOTES AND NEWS.

WE regret to announce the death of Gustave-Adolphe Hirn, the eminent physicist. He died at Colmar on Jan. 14, in his seventy-fifth year.

—A new kind of butter is now being made in Germany from cocoanut-milk. The Calcutta correspondent of the *London Times* says that the cocoanuts required for this industry are imported in large numbers from India, chiefly Bombay, and that the trade seems likely to attain still greater importance.

—Special attention was called by the United States Hydrographic Office to the unusually early southward movement of ice. Already (Feb. 1) thirty-six reports have been received of ice sighted since Jan. 5, and the positions and dates indicate that the ice season is one of the earliest on record,—nearly a month earlier than usual. This is undoubtedly due in large part to the prevalence of severe northerly gales east of Labrador, coincident with the heavy westerly gales of December and January along the transatlantic route. Masters of vessels should keep well clear of the Grand Banks for a few months, till there is less danger from icebergs and field-ice.

—Professor S. P. Langley, in a paper on the "Temperature of the Moon," in the December *Journal of Science*, states, that, of

the numerous conclusions to be drawn from this research, the most important one is that the mean temperature of the sunlit lunar soil is much lower than has been supposed, and is probably not greatly above zero Centigrade. In a postscript Professor Langley says, "I would ask to be allowed here to state that the very considerable expense for the special means and reduction of the preceding series of lunar researches was borne by one of the most generous and disinterested friends that science has had in this country,—the late William Thaw of Pittsburgh. By his own wish, no mention of his name was made in previous publications in connection with the results so greatly indebted to his aid. His recent death seems to remove the restriction imposed by such a rare disinterestedness."

—The proceedings of the International Marine Conference came to an end Dec. 31, 1889, and a final act has been issued showing for each division of the programme, and in the order of the divisions, the resolutions adopted. The delegations of the twenty-eight nations represented will now make their reports to their home governments, but none of the rules adopted will go into effect until approved and enforced by appropriate legislation. Relative to the great question of course-indicating sound-signals in foggy or thick weather, it was decided, after mature deliberation, that it is inexpedient to adopt any one of the various systems proposed. The various other questions before the conference, such as lights, sound-signals, distress-signals, regulations regarding the seaworthiness, draught, and designation of vessels, the saving of life and property from shipwreck, qualifications for officers and seamen, steamer-lanes, etc., were considered thoroughly, and the conclusions arrived at must command general attention and respect. It is of interest to note here that the carrying of white range-lights by steamers is favored, although not made obligatory; and steamer-lanes for transatlantic navigation are not adopted, although the various companies are urged to adopt regular routes for vessels of their own lines. The increased attention given to such subjects as the removal of dangerous derelicts and the use of oil to prevent heavy seas from breaking on board is of especial interest to the United States Hydrographic Office, in view of the efforts made to circulate information on these subjects by the "Pilot Chart."

—The International Horticultural Exhibition to be held in Berlin under royal and imperial auspices, from April 25 to May 5, will be characterized by two special features,—an exhibition of horticultural architecture, and one of horticultural models, apparatus, etc. It is requested that all exhibits or announcements of such should be promptly sent to the general secretary of the Society for the Promotion of Horticulture, Professor Dr. L. Wittmack, Invalidenstrasse 42, Berlin N., from whom all further information may be obtained. The exhibition will be held in the Royal Agricultural Exhibition Building, on the Lehn Railway. The general organizer of the scientific department is Professor Dr. Pringsheim, and the following gentlemen have undertaken the management of special branches: for the geography of plants, Professor Dr. Ascherson; for physiology, Professor Dr. Frank; for seeds, Herr P. Hennings; for morphology, anatomy, and the history of development, Professor Dr. Kny; for fungi, Professor Dr. Magnus; for soils, Professor Dr. Orth; for history, literature, and miscellaneous, Dr. Schumann; for officinal and technical objects, Dr. Tschirch. The minister for agriculture, Dr. Freiherr v. Lucius-Balhausen, will be the honorary president of the exhibition. The city of Berlin has granted the sum of 15,000 marks towards its expenses, and a guaranty fund of 80,000 marks has been raised.

—The marine meteorological service in the Spanish West Indies was organized about a year ago, and was in active operation during the last hurricane season, as already stated on the "Pilot Chart." Its importance to the West Indies, Mexico, and the United States, as well as to the commerce of every nation navigating the Bay of North America, is so great that it is gratifying to learn that its establishment has been definitely approved by a recent royal order issued through the minister of marine, Madrid. It is in charge of a commander in the navy, assisted by two lieutenants, with headquarters in Havana, at the Comandancia Gen-

eral del Apostadero, and a number of secondary reporting stations at points along the coasts of Cuba and Porto Rico. Capt. Luis García y Carbonell, who has organized the service, has been designated as its director. The United States Hydrographic Office has already, upon several occasions, acknowledged valuable assistance from Capt. Carbonell, and it regards the establishment of this weather service upon a permanent and effective basis as of the greatest importance to the interests of commerce.

—The month of January was remarkable for the tempestuous weather that prevailed almost uninterruptedly over the transatlantic steamship routes. Storms succeeded each other in rapid succession, the majority of them having developed inland, and moved east-north-east, on very similar paths, from Nova Scotia and across southern Newfoundland. The most notable storm of the month was probably the one that developed in the St. Lawrence valley, and moved out to sea across the Straits of Belle Isle early on the 3d, when it was central about latitude 52° north, longitude 48° west. It then moved nearly due east, rapidly increasing in intensity, until reaching the 20th meridian, when it curved to the north-eastward, and was central on the 5th about latitude 55° north, longitude 17° west, and disappeared north of Scotland. The barometric pressure in this storm was remarkably low, the lowest corrected reading reported being 27.93, at 4 P.M., Jan. 4, about latitude 53° north, longitude 23° west. This was reported to the United States Hydrographic Office by Capt. Johnson, of the British steamship "Connemara," who further states that the storm was accompanied by winds of hurricane force, with terrific squalls, occasional hail, and mountainous seas.

—The January number of the *Kew Bulletin* contained an able and most interesting report, by Dr. Francis Oliver, on the so-called weather-plant. This plant is *Abrus precatorius*, Linn., a well-known tropical weed. Mr. Joseph F. Nowack claims to have discovered that its leaves have "the peculiar property of indicating by their position various changes in nature about forty-eight hours before the said changes occur." Numerous observations with hundreds of such plants have convinced him that "any given position of the leaves corresponds always to a certain condition of the weather forty-eight hours afterwards." Some time ago he devised an apparatus for the purpose of putting his supposed discovery to practical use. It consists of a "transparent vessel containing the weather-plant, closed on all sides, protected against injurious external influences, and adapted to be internally ventilated and maintained at a temperature of at least 18° Reaumur, these being the conditions under which, in temperate climates, Nowack's weather-plant answers the purpose of a weather-indicator." Last year Mr. Nowack was anxious that his apparatus should be scientifically tested at Kew, but it would not have been easy for any member of the staff of the Royal Gardens to find time for the necessary observations. The task was undertaken by Dr. Francis Oliver, who now presents the results of his investigation. The following, as we learn from *Nature*, is a summary of the conclusions at which he has arrived: "I contend that all the movements exhibited by the leaves of *Abrus precatorius* depend on causes not so far to seek as those suggested by Mr. Nowack. The ordinary movements of the leaflets, of rising and falling, are called forth in the main by changes in the intensity of the light. In a humid atmosphere they are more sluggish than in a relatively dry one. In other words, when the conditions are favorable for transpiration, the movements are most active. The position for snow and hail is connected intimately, in the cases that have come under my observation, with a spotting or biting (by insects) of the leaflets, and is not due to any other external factor. The position for fog and mist, and for electricity in the air, is probably due to the disturbance caused by varying light, the rhythmical movements of the leaflets being temporarily overthrown. The position indicating thunder and lightning I take to be pathological from its tendency to recur on the same leaves. Daily movements of the rachis constitute a periodic function in this as in many other plants with pinnate leaves. The regularity of these oscillations is considerably influenced by both light and temperature."